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THE DIRECTV GROUP INC			LY, NGHI H	
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DATE MAILED: 08/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/661,967

**Applicant(s)**

FERIA ET AL.

**Examiner**

Nghi H. Ly

**Art Unit**

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2617

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2617.

## **DETAILED ACTION**

### ***Response to Amendment***

2. a. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

b. Applicant's arguments filed 06/15/06 have been fully considered but they are not persuasive.

On pages 9-10 of applicant's remarks, applicant argues that the Kavehrad reference is not directed to a receiver in a gateway station, and the Kavehrad reference does not teach a gateway station that is in communication with a stratospheric platform, and Kavehrad reference also does not teach that the gateway station receives a first signal having a first beam having interference from the second beam therein and receiving a second signal having the second beam having interference from the first beam, wherein the gateway station has a first subtracting block and a second subtracting block for subtracting the second signal from the first signal and the first signal from the second signal.

In response, Ibanez-Meier teaches (not Kavehrad) a gateway station that is in communication with a stratospheric platform (see Ibanez-Meier, fig.1) and the combination of Ibanez-Meier and Kavehrad teaches applicant's claimed invention. In addition, the combination of Ibanez-Meier or Kavehrad does not specifically disclose the gateway station comprising a first subtracting block and a second subtracting block.

Art Unit: 2617

However, Kavehrad differs from the claims is that the above operations are done in the satellite (see Kavehrad, column 1, lines 20-21), not in the gateway station as recited in the claim. The examiner believes that the above difference would not render the claim patentable because it would merely depend on where those skilled in the art would like to perform the above operations (in the satellite or gateway station since both Kavehrad's satellite and Applicant's gateway station are signal repeaters).

Furthermore, Applicant's attention is directed to the rejection of claim 1, 14, 18, 20, 25 and 26 below.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kavehrad such that it is the gateway station, which performs the subtraction, in order to perform interference cancellation.

On page 10 of applicant's remarks, applicant argues that Rouffer (or Baier) does not teach subtracting using the receiving signals.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, Kavehrad teaches subtracting using the receiving signals (see Kavehrad, fig. 1, items 19 and 25, and column 6, lines 7-43) and the combination of Ibanez-Meier, Kavehrad and Rouffer (or Baier) does indeed teach Applicant's claimed invention. In addition, Applicant's attention is directed to the teaching of Rouffer (or Baier) in claims below.

Art Unit: 2617

On page 10 of applicant's remarks, applicant further argues that Baier does not teach the first weight is a function of user position files.

In response, Baier does indeed teach the first weight is a function of user position files (see column 8, lines 57-67 wherein proper weights are obtained adaptively, where adaptive variation as a function of user position file is inherently implied. In addition, Applicant's specification page 10, lines 12-18 merely recites "the user position files". However, it fails to further define what a "the user position files" is. Therefore, Baier does indeed teach Applicant's claimed limitation with a broadest reasonable interpretation).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

Art Unit: 2617

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 8-14, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ibanez-Meier et al (US 6,151,308) in view of Kavehrad (US 4,577,330).

Regarding claims 1, 14 and 20, Ibanez-Meier teaches a communications system comprising: stratospheric platform (fig. 1, communication platform 110) having a payload controller (fig.3, processor 310) and a phased array antenna having a plurality of elements for generating a first beam and a second beam (fig.1), a gateway station in communication with the stratospheric platform (fig.1, destination device 130-132, and column 4, line 64, communication gateways), the gateway station receiving a first signal having the first beam having interference from the second beam therein and receiving a second signal having the second beam having interference from the first beam therein (column 16, lines 53-55).

Ibanez-Meier does not specifically disclose a first subtracting block for subtracting the second signal from said first signal to obtain the first beam, a second subtracting block for subtracting the first signal from said second signal to obtain the second beam.

Kavehrad teaches a first subtracting block for subtracting the second signal from said first signal to obtain the first beam (see fig.1, item 25, and column 6, lines 7-43), a

Art Unit: 2617

second subtracting block for subtracting the first signal from said second signal to obtain the second beam (see fig.1, item 19, and column 6, lines 7-43).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Kavehrad into the system of Ibanez-Meier in order to provide a technique for cross-polarization interference cancellation (see Kavehrad, column 1, lines 7-17).

The combination of Ibanez-Meier or Kavehrad does not specifically disclose the gateway station comprising a first subtracting block and a second subtracting block. However, Kavehrad differs from the claims is that the above operations are done in the satellite (see Kavehrad, column 1, lines 20-21), not in the gateway station as recited in the claim. The examiner believes that the above difference would not render the claim patentable because it would merely depend on where those skilled in the art would like to perform the above operations (in the satellite or gateway station since both Kavehrad's satellite and Applicant's gateway station are signal repeaters).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kavehrad such that it is the gateway station, which performs the subtraction, in order to perform interference cancellation.

Regarding Claim 8, Ibanez-Meier further teaches the gateway station comprises a beam generator for generating beam signals (Ibanez-Meier, column 6, Lines 45-41, wherein device interfaces enable the generation of a beam which has a dynamically-shapeable geometry).

Regarding claim 9, Ibanez-Meier further teaches the gateway station further comprises a multiplexes/demultiplexer (see column 12, lines 10-21 and column 14, lines 25-28).

Regarding claim 10, Ibanez-Meier further teaches the multiplexes/demultiplexer comprises a code division multiplexes/demultiplexer (see column 12, lines 10-21 and column 14, lines 25-28).

Regarding claim 11, Ibanez-Meier further teaches the gateway station is coupled to a terrestrial network (Ibanez-Meier, column 8, lines 49-56).

Regarding claim 12, Ibanez-Meier further teaches a communications system as recited in claim 11, wherein the terrestrial network comprises the Internet (Ibanez-Meier, column 14, line 50).

Regarding claim 13, Ibanez-Meier further teaches the terrestrial network comprises the public service telephone network (Ibanez-Meier, column 8, lines 49-56, where terrestrial network usually includes a public service telephone network).

Regarding claim 18, Ibanez-Meier teaches a method of controlling a communications system having a stratospheric platform (fig. 1, communication platform 110), said method comprising the steps of: receiving a first signal having a first beam having interference from a second beam herein at a gateway station (fig.1), receiving a second signal having the second beam (fig.1, destination device 130-132, and column 4, line 64, communication gateways) having interference from the first beam therein at a gateway station (column 16, lines 53-55),



Ibanez-Meier does not specifically disclose weighting said first signal with a first weight to provide a weighted first signal, weighting the second signal with a second weight to provide a weighted second signal, subtracting the second signal from said first signal to obtain the first beam, and subtracting said second signal from the second signal to obtain the second beam.

Kavehrad teaches weighting said first signal with a first weight to provide a weighted first signal (see column 3, lines 64-68 and column 6, lines 7-43, see “weighting” or “weighted”), weighting the second signal with a second weight to provide a weighted second signal (see column 3, lines 64-68 and column 6, lines 7-43, see “weighting” or “weighted”), subtracting the second signal from said first signal to obtain the first beam (see fig.1, item 25, and column 6, lines 7-43), and subtracting said second signal from the second signal to obtain the second beam (see fig.1, item 19, and column 6, lines 7-43).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Kavehrad into the system of Ibanez-Meier in order to provide a technique for cross-polarization interference cancellation (see Kavehrad, column 1, lines 7-17).

6. Claims 2-4, 15-17, 19 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ibanez-Meier et al (US 6,151,308) in view of Kavehrad (US 4,577,330) and further in view of Baier et al (US 6,519,477).

Regarding claim 2, Ibanez-Meier as modified by Kavehrad teaches a communication system of claim 1. Ibanez-Meier as modified by Kavehrad does not specifically disclose weighting the second signal with a first weight prior to subtracting the second signal from the first signal.

Baier teaches weighting the second signal with a first weight prior to subtracting the second signal from the first signal (see fig.5, the weights W1, W2, W3 and W4, prior to box "interference Cancellation").

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Baier into the system of Ibanez-Meier and Kavehrad in order to allow channel impulse response to be determined in an improved manner, such that the determination of the channel impulse responses are resistant to interference source (see Baier, column 1, line 66 to column 2, line 2).

Regarding claim 3, Ibanez-Meier as modified by Kavehrad teaches a communication system of claim 1. Ibanez-Meier as modified by Kavehrad does not specifically disclose weighting the first signal with a second weight prior to subtracting the second signal from the first signal.

Baier teaches weighting the first signal with a second weight prior to subtracting the second signal from the first signal (see fig.5, the weights W1, W2, W3 and W4, prior to box "Interference Cancellation").

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Baier into the system of Ibanez-Meier and Kavehrad in order to allow channel impulse response to be determined in an

Art Unit: 2617

improved manner, such that the determination of the channel impulse responses are resistant to interference source (see Baire, column 1, line 66 to column 2, line 2).

Regarding claims 4, 17 and 19, Ibanez-Meier as modified by Kavehrad teaches a communication system of claims 1, 14 and 18. Ibanez-Meier as modified by Kavehrad does not specifically disclose the first weight is a function of user position files.

Baire teaches the first weight is a function of user position files (see column 8, lines 57-67 wherein proper weights are obtained adaptively, where adaptive variation as a function of user position file is inherently implied. In addition, Applicant's specification page 10, lines 12-18 merely recites "the user position files". However, it fails to further define what a "the user position files" is. Therefore, Baire does indeed teach Applicant's claimed limitation with a broadest reasonable interpretation).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Baier into the system of Ibanez-Meier and Kavehrad in order to allow channel impulse response to be determined in an improved manner, such that the determination of the channel impulse responses are resistant to interference source (see Baire, column 1, line 66 to column 2, line 2).

Regarding claim 15, see claims 2 and 3 for the teaching of Ibanez-Meier and Kavehrad.

Regarding claim 16, see claim 1 for the teaching of Ibanez-Meier and Kavehrad.

Regarding claim 21, see claims 2 and 3 for the teaching of Ibanez-Meier and Kavehrad.

Regarding claim 22, Ibanez-Meier further teach a method as recited in claim 21, wherein the at least one signal is associated with a mobile user (Ibanez-Meier, fig. 15).

Regarding claim 23, Ibanez-Meier further teach a method as recited in claim 22, wherein the at least one other of the plurality of signals is associated with a mobile user (Ibanez-Meier, fig.15).

Regarding claim 24, Ibanez-Meier as modified by Kavehrad teaches a method as recited in claim 1. Ibanez-Meier as modified by Kavehrad teaches does not specifically disclose the first weight is a function of user position files.

Baire teaches the first weight is a function of user position files (see column 8, lines 57-67 wherein proper weights are obtained adaptively, where adaptive variation as a function of user position file is inherently implied).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Baier into the system of Ibanez-Meier and Kavehrad in order to allow channel impulse response to be determined in an improved manner, such that the determination of the channel impulse responses are resistant to interference source (see Baire, column 1, line 66 to column 2, line 2).

Regarding claims 25 and 26, Ibanez-Meier teaches communications system comprising: a stratospheric platform (fig. 1, communication platform 110) having a payload controller (fig.3, processor 310) and an antenna having a plurality of elements for generating a first beam and a second beam (fig.1), a gateway station in communication with said stratospheric platform (fig.1, destination device 130-132, and column 4, line 64, communication gateways), said gateway station receiving a first

Art Unit: 2617

beam having interference from the second beam therein and receiving a second signal having the second beam having interference from the first beam therein (column 16, lines 53-55).

Ibanez-Meier does not specifically disclose a first subtracting block subtracting said second weighted signal from said first signal to obtain the first beam, a second subtracting block for subtracting said first signal from said second signal to obtain the second beam.

Kavehrad teaches a first subtracting block subtracting said second weighted signal from said first signal to obtain the first beam (see fig.1, item 25, and column 6, lines 7-43), a second subtracting block for subtracting said first signal from said second signal to obtain the second beam (see fig.1, item 19, and column 6, lines 7-43. In addition, see column 1, lines 20-22 and column 2, lines 67-68).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Kavehrad into the system of Ibanez-Meier in order to provide a technique for cross-polarization interference cancellation (see Kavehrad, column 1, lines 7-17).

The combination of Ibanez-Meier or Kavehrad does not specifically disclose the gateway station comprising a first subtracting block and a second subtracting block. However, Kavehrad differs from the claims is that the above operations are done in the satellite (see Kavehrad, column 1, lines 20-21), not in the gateway station as recited in the claim. The examiner believes that the above difference would not render the claim patentable because it would merely depend on where those skilled in the art would like

Art Unit: 2617

to perform the above operations (in the satellite or gateway station since both Kavehrad's satellite and Applicant's gateway station are signal repeaters).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kavehrad such that it is the gateway station, which performs the subtraction, in order to perform interference cancellation.

The combination of Ibanez-Meier and Kavehrad further does not specifically disclose the gateway station weighting the second signal with a first weight to form a weighted second signal and wherein said first weight is a function of user position files.

Baire teaches the gateway station weighting the second signal with a first weight to form a weighted second signal (see fig.5, the weights W1, W2, W3 and W4, prior to box "interference Cancellation") and wherein said first weight is a function of user position files (see column 8, lines 57-67 wherein proper weights are obtained adaptively, where adaptive variation as a function of user position file is inherently implied. In addition, Applicant's specification page 10, lines 12-18 merely recites "the user position files". However, it fails to further define what a "the user position files" is. Therefore, Baire does indeed teach Applicant's claimed limitation with a broadest reasonable interpretation).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Baier into the system of Ibanez-Meier and Kavehrad in order to allow channel impulse response to be determined in an improved manner, such that the determination of the channel impulse responses are resistant to interference source (see Baire, column 1, line 66 to column 2, line 2).

7. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ibanez-Meier et al (US 6,151,308) in view of Kavehrad (US 4,577,330) and further in view of Rouffer et al (US 5,410,731).

Regarding claim 5, the combination of Ibanez-Meier and Kavehrad teaches a demultiplexer (see Ibanez-Meier, column 12, lines 10-21). The combination of Ibanez-Meier and Kavehrad does not specifically disclose the payload controller comprises a demultiplexer for receiving control signals.

Rouffer teaches the payload controller comprises a demultiplexer for receiving control signals (fig.3, see the connection between demultiplexer 8 and central control 9, and see column 3, lines 65-68).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Rouffer into the system of Ibanez-Meier and Kavehrad in order to provide a simpler, cheaper way of solving the problem that is based on using a system which can be modified as a function of market requirements (see Rouffer, column 2, lines 3-6).

Regarding claim 6, the combination of Ibanez-Meier and Kavehrad teaches a demultiplexer (see Ibanez-Meier, column 12, lines 10-21). The combination of Ibanez-Meier and Kavehrad does not specifically disclose the demultiplexer generates a plurality of element control signals.

Rouffer teaches the demultiplexer generates a plurality of element control signals (fig.3, see the connection between demultiplexer 8 and central control 9, and see column 3, lines 65-68).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Rouffer into the system of Ibanez-Meier and Kavehrad in order to provide a simpler, cheaper way of solving the problem that is based on using a system which can be modified as a function of market requirements (see Rouffer, column 2, lines 3-6).

Regarding claim 7, Ibanez-Meier further teaches the element control signals are coupled to an RF feed, and the RF feed is coupled to the plurality of elements of the phased array antenna (Ibanez-Meier, column 6, lines 43-45).

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi H. Ly whose telephone number is (571) 272-7911. The examiner can normally be reached on 8:30 am-5:30 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.



Art Unit: 2617

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nghi H. Ly

A handwritten signature in black ink, appearing to be 'Nghi H. Ly', written in a cursive style.